



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/819,120 | 03/27/2001 | Stepan Sokolov | SUN1P811/P5512 | 4323 |

22434 7590 06/18/2004

BEYER WEAVER & THOMAS LLP
P.O. BOX 778
BERKELEY, CA 94704-0778

EXAMINER

SHAH, NILESH R

ART UNIT PAPER NUMBER

2127

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,120

Applicant(s)

SOKOLOV ET AL.

Examiner

Nilesh R Shah

Art Unit

2127

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.6.7.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 are presented for examination.
2. The cross reference related to the application cited in the specification must be updated (i.e. updated the relevant status, with PTO serial numbers or patent numbers where appropriate, on page 1, lines 8-24. The entire specification should be so revised).

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.
5. As per claims 1-20, these claims are drawn to software, which does not fall within the statutory classes recited in 35 U.S.C. 101. Claim 1 states a set of virtual machine instructions, claim 10 states a method of converting a set of Java Bytecode executable instructions and claim 13 states a Java Bytecode instruction translator, all are related to software. (An example of a patent that recites a system/apparatus/machine, which comprises of software in combination with a computer or computer readable medium, is

patent number 5,559,960. Claim 1 recites a virtual machine instructions suitable for execution in a virtual machine). (MEPE 2106).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. The following claim language is not clearly define:

As per claim 2, line 2 it is unclear how the range 30-50 percent was determined. (i.e. how can the percentage be determined when the actual percent of Java Bytecode executable instructions are not given and the total number of virtual machine instructions are not given?)

8. Claims 1-6, 10, 13-20 contains the trademark/trade name Java Bytecode. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35

U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982).

The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe the instructions and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

10. Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Lindwer (6,349,377).

11. As per claim 1, Lindwer teaches a set of virtual machine instructions suitable for execution in a virtual machine, the set of virtual machine instructions representing a number of corresponding Java Bytecode executable instructions that are also suitable for execution in the virtual machine (col. 1 lines 44-48); wherein the set of the virtual machine instructions consists of a number of virtual machine instructions which is less than the number of the corresponding Java Bytecode executable instructions (col. 1 lines 53-56), and wherein every one of the corresponding Java Bytecode executable instructions can be represented by at least one of the virtual machine instructions in the virtual machine instruction set (col. 3 lines 17-23, col. 6 lines 46-53).

12. As per claim 2, Lindwer teaches a set of virtual machine instructions wherein the number of virtual machine instructions is about 30 to 50 percent of the number of the corresponding Java Bytecode executable instructions (col. 7 lines 1-7, col. 7 lines 24-40).

13. As per claim 3, Lindwer teaches a set of virtual machine instructions wherein two or more Java Bytecode executable instructions are represented by one virtual machine instruction (col. 6 lines 46-52, col. 14 lines 45-53).

14. As per claim 4, Lindwer teaches a set of virtual machine instructions wherein at least one of the Java Bytecode executable instructions can be represented by the two or more virtual machine instructions (col. 3 lines 29-34).
15. As per claim 5, Lindwer teaches a set of virtual machine instructions wherein the least one Java Bytecode executable instruction is a conditional data flow operation (col. 3 lines 29-34).
16. As per claim 6, Lindwer teaches a set of virtual machine instructions wherein the set includes at least one virtual machine instruction that represents at least one operation that cannot be represented by any one of the Java Bytecode executable instructions (col. 12 lines 60-67).
17. As per claim 7, Lindwer teaches a set of virtual machine instructions wherein the at least one virtual machine instruction represents a duplicate stack operation (col. 14 lines 45-50, col. 6 lines 28-34 col. 9 lines 8-15).
18. As per claim 8, Lindwer teaches a set of virtual machine instructions wherein at least one virtual machine instruction is internally represented in the virtual machine by a pair of streams (col. 6 lines 46-52, col. 8 lines 14-20, col. 14 lines 45-50).

Art Unit: 2127

19. As per claim 9, Lindwer teaches a set of virtual machine instructions wherein the pair of streams includes a code stream and a data stream, wherein the code stream is suitable for containing a code portion of the at least one virtual machine instruction (col. 6 lines 46-52, col. 8 lines 14-20, col. 14 lines 45-50); and
and the data stream is suitable for containing a data portion of the at least one virtual machine instruction (col. 6 lines 46-52, col. 8 lines 14-20, col. 14 lines 45-50).

20. As per claim 10, Lindwer teaches method of converting a set of Java Bytecode executable instructions into a set of executable virtual machine instructions, the method comprising:
receiving one or more bytes representing a Java Bytecode instruction suitable for execution in a virtual machine(col. 1 lines 53-56); and
selecting a corresponding virtual machine instruction, the corresponding virtual machine instruction suitable for execution in the virtual machine and representing one or more operations that can be performed when the Java Bytecode instruction is executed(col. 6 lines 46-52, col. 8 lines 14-20, col. 14 lines 45-50); and
wherein the virtual machine instruction can represent at least two or more Java Bytecode executable instructions such that operations that can be performed by executing the at least two or more Java Bytecode executable instructions can be performed by execution of the virtual machine instruction (col. 6 lines 46-52, col. 8 lines 14-20, col. 14 lines 45-50).

21. As per claim 11, Lindwer teaches method, wherein the method further comprises: loading the virtual machine instruction into the virtual machine as an internal representation with a pair of streams (col. 14 lines 45-50).
22. As per claim 12, Lindwer teaches method wherein the pair of streams includes a code stream and a data stream, the code stream suitable for containing a code portion of the at least one virtual machine instruction, and the data stream suitable for containing a data portion of the at least one virtual machine instruction (col. 6 lines 46-52, col. 8 lines 14-20, col. 14 lines 45-50).
23. As per claim 13, Lindwer teaches a Java Bytecode instruction translator operating to convert a set of Java Bytecode executable instructions suitable for execution on a virtual machine into a set of corresponding executable virtual machine instructions (col. 1 lines 53-56); and wherein the corresponding virtual machine instructions are also suitable for execution in the virtual machine and represent operations that can be performed by execution of a number of corresponding Java Bytecode instructions (col. 14 lines 45-50); and wherein the corresponding set of the virtual machine instructions consists of a number of virtual machine instructions that is less than the number of the corresponding Java Bytecode executable instructions (col. 6 lines 46-52, col. 8 lines 14-20, col. 14 lines 45-50).

Art Unit: 2127

24. Claims 14-20 are rejected based on the same rejections as claims 3-20 above.

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Alexander, III et al (6,118,940) teaches the use of loading byte codes and virtual machine codes (fig 1, col. 3 line 60 –col. 4 line 24).

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nilesh R Shah whose telephone number is 703-305-8105.


The examiner can normally be reached on Monday-Friday 8am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on 703-305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NS

May 26, 2004


MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100